

What is claimed is;

1. An audio reproducing apparatus for performing special reproductions of decoded audio data according to reproducing speed, wherein said decoded audio data is divided by a minute frame, and a reproducing position for each of said minute frames is determined by a reproducing position function obtained by time integration of said reproducing speed, so that said decoded audio data is reproduced in a normal manner from source audio positions respectively corresponding to said reproducing positions by an amount corresponding to the minute frame.

2. An audio reproducing apparatus for performing special reproductions of decoded audio data according to reproducing speed, comprising:

an audio buffer memory unit for temporarily storing said decoded audio data and a source audio position in correspondence with each other;

a reproducing speed control unit for outputting reproducing positions calculated individually for each minute frame by a reproducing position function that is obtained by time integration of said reproducing speed; and

a counter for reproducing said decoded audio data in said audio buffer memory unit in a normal manner from said source audio positions respectively corresponding to said

09754852.014004

reproducing positions by an amount corresponding to said minute frame.

3. The audio reproducing apparatus according to claim 2, further including an audio filter for filtering the decoded audio data reproduced by the counter in a normal manner.

4. The audio reproducing apparatus according to claim 2, wherein the audio buffer memory unit is brought into a through state, whereby the decoded audio data is outputted.

5. The audio reproducing apparatus according to claim 3, wherein the audio buffer memory unit and the audio filter are each brought into a through state, whereby the decoded audio data is outputted.

6. The audio reproducing apparatus according to claim 2, wherein when reverse-direction reproduction is performed, the counter reproduces decoded audio data in the audio buffer memory unit in a reverse direction at a single-speed from source audio positions each corresponding to a reproducing position by an amount corresponding to a minute frame.

09761852-011801

7. The audio reproducing apparatus according to claim 2, wherein the reproducing speed control unit corrects a reproducing position for output in such a manner that a central source audio position of decoded audio data to be reproduced by an amount corresponding to a minute frame in a normal manner or in a reverse direction at a single-speed is read at a central time of each minute frame.

8. The audio reproducing apparatus according to claim 2, further including a consonant detector for detecting a consonant portion and a source audio position of said consonant portion from decoded audio data, whereby referring to said consonant detector, the reproducing speed control unit corrects a reproducing position for output in such a manner that the source audio position of said consonant portion is included in source audio positions of decoded audio data to be reproduced by an amount corresponding to a minute frame in a normal manner or in a reverse direction at a single-speed.

9. An audio reproducing method for performing special reproductions of decoded audio data according to reproducing speed, wherein said decoded audio data is divided by a minute frame, and a reproducing position for each of said minute frames is determined by a reproducing

09761852-011801

position function obtained by time integration of said reproducing speed, so that said decoded audio data is reproduced in a normal manner from source audio positions respectively corresponding to said reproducing positions by an amount corresponding to the minute frame, said method comprising:

an audio data buffering step for temporarily storing said decoded audio data and a source audio position in correspondence with each other;

a reproducing speed control step for outputting reproducing positions calculated individually for each minute frame by a reproducing position function that is obtained by time integration of said reproducing speed; and

an audio data reading step for reproducing said decoded audio data in said audio data buffering step in a normal manner from said source audio positions respectively corresponding to said reproducing positions by an amount corresponding to said minute frame.

10. The audio reproducing method according to claim 9, further including an audio data filtering step for filtering the decoded audio data reproduced in a normal manner in the audio data reading step.

11. The audio reproducing method according to claim 9,

09761852.011804

wherein the audio data buffering step is brought into a through state, whereby the decoded audio data is outputted.

12. The audio reproducing method according to claim 10, wherein the audio data buffering step and the audio data filtering step are each brought into a through state, whereby the decoded audio data is outputted.

13. The audio reproducing method according to claim 9, wherein when reverse-direction reproduction is performed, decoded audio data in the audio data buffering step is reproduced in the audio data reading step in a reverse direction at a single-speed from source audio positions each corresponding to a reproducing position by an amount corresponding to a minute frame.

14. The audio reproducing method according to claim 9, wherein a reproducing position is corrected for output in the reproducing speed control step in such a manner that a central source audio position of decoded audio data to be reproduced by an amount corresponding to a minute frame in a normal manner or in a reverse direction at a single-speed is read at a central time of each minute frame.

15. The audio reproducing method according to claim 9,

097631852.011801
T0310.25875260

further including a consonant detecting step for detecting a consonant portion and a source audio position of said consonant portion from decoded audio data, whereby referring to said consonant detecting step, a reproducing position is corrected for output in the reproducing speed control step in such a manner that the source audio position of said consonant portion is included in source audio positions of decoded audio data to be reproduced by an amount corresponding to a minute frame in a normal manner or in a reverse direction at a single-speed.

16. A video-audio reproducing apparatus for performing special reproductions of decoded audio data and decoded video data according to reproducing speed, comprising:

an audio buffer memory unit for temporarily storing said decoded audio data and a source audio position in correspondence with each other;

a reproducing speed control unit for outputting reproducing positions calculated individually for each minute frame by a reproducing position function that is obtained by time integration of said reproducing speed; and

a counter for reproducing said decoded audio data in said audio buffer memory unit in a normal manner from said source audio positions respectively corresponding to said reproducing positions by an amount corresponding to said

09761852-011801

minute frame,

wherein said reproducing speed control unit further outputs a reproducing address for each minute frame for an image, said reproducing addresses each corresponding to a reproducing position calculated by the reproducing position function, and wherein said video-audio reproducing apparatus further comprises;

a video buffer memory unit for temporarily storing decoded video data and a source video position in correspondence with each other; and

a video address generator for outputting said decoded video data in said video buffer memory unit from said source video positions respectively corresponding to said reproducing addresses by an amount corresponding to said minute frame for an image.

17. The video-audio reproducing apparatus according to claim 16, further including a video filter for filtering the decoded video data outputted by the video address generator.

18. The video-audio reproducing apparatus according to claim 16, wherein the video buffer memory unit is brought into a through state, whereby the decoded video data is outputted.

09761852-011801

19. The video-audio reproducing apparatus according to claim 17, wherein the video buffer memory unit and the video filter are each brought into a through state, whereby the decoded video data is outputted.

20. A video-audio reproducing method for performing special reproduction of decoded audio data and decoded video data according to reproducing speed, said method comprising:

an audio data buffering step for temporarily storing said decoded audio data and a source audio position in correspondence with each other;

a reproducing speed control step for outputting reproducing positions calculated individually for each minute frame by a reproducing position function that is obtained by time integration of said reproducing speed; and

an audio data reading step for reproducing said decoded audio data in said audio data buffering step in a normal manner from said source audio positions respectively corresponding to said reproducing positions by an amount corresponding to said minute frame,

wherein in said reproducing speed control step, a reproducing address for each minute frame for an image is further outputted, said reproducing addresses each

09761852.011801

corresponding to a reproducing position calculated by the reproducing position function, and wherein said video-audio reproducing method further comprises:

a video data buffering step for temporarily storing decoded video data and a source video position in correspondence with each other; and

a video address generating step for outputting said decoded video data in a video buffer memory unit from said source video positions respectively corresponding to said reproducing addresses by an amount corresponding to said minute frame for an image.

21. The video-audio reproducing method according to claim 20, further including a video filtering step for filtering the decoded video data outputted in the video address generating step.

22. The video-audio reproducing method according to claim 20, wherein the video data buffering step is brought into a through state, whereby the decoded video data is outputted.

23. The video-audio reproducing method according to claim 21, wherein the video data buffering step and the video filtering step are each brought into a through state,

09761852.011801

whereby the decoded video data is outputted.

09761852.011804